Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

MATHEMATICS B J567/02

Paper 2 (Foundation Tier)

Specimen Mark Scheme

The maximum mark for this Paper is **100**.

This document consists of **6** printed pages and **2** blank pages.

SP (SLM) T12103

1	**(a)** 123	**1**	
	(b) 100	**1**	
	(c) 1152	**1**	
2	14 [subtract] 5 12 Divide by 2 oe	**1** **1** **1** **1**	 Accept halve (or 'half')
3	**(a)** 9 [hours] 30 [minutes]	**1**	Accept 9½ hours
	(b) 5	**1**	
	(c) 17	**3**	**M1** for 25 × 5 [=125] AND **M1** for '*their* 125' – 108
	(d)(i) F S F V C S C V T S T V	**2**	All correct no repeats Clear intention of correct activities **B1** for at least 3 correct, condone repeats, extras or omissions
	(ii) $\frac{1}{6}$	**1**	ft *their* table
4	**(a)(i)** 17	**1**	
	(ii) July	**1**	
	(iii) 5	**1**	
	(iv) 15	**2**	**B1** for ⁻1 seen
	(b) 3 000 000	**1**	or 3 million
	(c) 9:30 am or 0930	**1**	
5	**(a)(i)** 36	**1**	
	(ii) 240	**1**	
	(b) 0·2 cm, 20 mm, 20 cm, 200 cm, 20 m	**2**	**B1** for longest and shortest both correct or complete reversal
6	**(a)** 4 squares shaded	**1**	
	(b) 12	**2**	**M1** for attempt at 28 ÷ 7 × 3, or 4 seen
7	**(a)(i)** 5*b*	**1**	
	(ii) 5*c* + 2*d* final answer	**2**	**M1** for 5*c* or 2*d* seen
	(b) 23	**2**	**M1** for 3 × 5 + 4 × 2 seen, or both 15 and 8 seen

8	**(a)** Two 2 cm by 3 cm rectangles correctly positioned	**2**	**B1** for at least one 2 cm by 3 cm rectangle seen
	(b) 4, 3, 2	**1**	Any order
9	**(a)** isosceles	**1**	nambi
	(b) 14·4	**2**	**M1** for 5·4 + 5·4 + 3·6 oe soi
10	56° angles on straight line [=180°] 44° angles in a triangle [=180°]	**1** **1** **1** **1**	
11	**(a)** 63	**2**	**M1** 0·35 × 180 seen, or attempt at 10% × 3 + 5% with 10% = £18
	(b) 34·57	**2**	**B1** for 34·58 or 34·574[7…] as answer or 60·16 seen
12*	A clear, concise and comprehensive answer that addresses all the major points. The answer should be coherent, contain mathematical terminology and use correct spelling, punctuation and grammar e.g. A rectangle is a parallelogram where all angles are right angles. A completely correct answer that is badly expressed **or** a slightly incorrect or incomplete answer expressed clearly and coherently. No relevant content.	**3** **2-1** **0**	For the lower mark - the answer addresses some of the major points but does not clearly connect them or contains mathematical terminology with some errors in spelling, punctuation and grammar.
13	**(a)** Yes, 1½ [oe] litres needed, or 2 litres is enough for 8 people, or 2 ÷ 6 = 0·33… and 0·33… litres is more than ¼ litre	**2**	**M1** Attempt at $\frac{1}{4} \times 6$, or 2 ÷ 6 = 0·33…
	(b) Yes, late on 12% of days, or 10% of 25 is 2·5, so 3 is more than 10%	**2**	**M1** for $\frac{12}{100}$ or 10% = 2·5 seen
14	**(a)** Angle of 50° AC 7 cm and triangle complete	**1** **1**	±2° ±2 mm
	(b) 6·4 [cm]	**1**	ft *their* triangle
15	39 miles = 62 to 63 km, or 68 km = 42 to 44 miles Mel 5 to 6 km, or 3 to 5 miles	**M2** **A1** **B1**	**B1** for attempt to use graph for relevant conversion eg 34 km or 10 miles Dependent on M2 Must see correct unit ft *their* conversion

16	**(a)** No, difficult to answer precisely	**1**	Award mark for answer implying respondents may not remember the number of books they borrowed
	(b) Reworded non-leading question	**1**	Or question with a 'don't know' option
	(c) Only asking people who use the library at that time	**1**	Accept implication that it will be a poor sample
17	**(a)** Accept any reasonable rounding leading to 280 – 320 eg 3·5 × 80 = 280, 4 × 80 = 320, 4 × 70 = 280 or $3\frac{3}{4} \times 80 = 300$	**2**	**M1** for rounding evidenced by 3·5, 4 or 80 or correct 'product' but incorrect answer
	(b) 288·75 oe or 289 or 290	**2**	**M1** 77 × *their* time, for time allow 3·75, 345, 225, 3·45
18*	Answer of 4·5 oe supported by correct and coherent algebraic notation. Each line of working must be an equation and any fractions must be written correctly. Correct answer obtained but with some errors in notation **or** minor errors in working but supported by correct and coherent algebraic notation. The answer is incorrect and there are no correct steps in any working.	**3** **2-1** **0**	For the lower mark – evidence of correctly combining like terms eg 4*x* = 18, but incorrect or no final solution produced **or** incorrect solution with some evidence of attempt to combine like terms.
19	$\pi \times 0 \cdot 75^2$ 1·767(1…) or 1·77 50 cm per m^2 implied *their* 1·767' × 50 *'their* 88(·3…) ÷ 8 11	**M1** **A1** **M1** **M1** **M1** **A1**	Accept integer answer only for final A1
20	**(a)** 5 : 3 **(b)** 96	**2** **2**	**M1** for any equivalent ratio to 5 : 3 including 140 : 84, or 3 : 5 **M1** 240 ÷ (3 + 2)
21	Mean and median calculated	**5**	**M1** attempt to add values implied by 4136 **M1 dep** *their* 4136 ÷ 11 **A1** 376 seen AND **M2** all values listed in order and median indicated or stated OR **M1** at least 10 values **listed in order**

22	8 + 27 + 343 = 378 FALSE 1 + 125 + 27 = 153 TRUE 64 + 0 + 343 = 407 TRUE	**1** **1** **1**	
23	1353 www	**2**	**M1** for 451 × 3 soi
24	B, C, D, E, G, H are from the same tree; A and F are outliers (can be implied), and evidence (see method)	**5**	Evidence : <u>Scatter Diagram</u> **M1** correct axes labelled **M2** for 7 correct points plotted (allow **M1** for 4 points correct) **M1** for identifying main cluster on diagram or in statement allow length on either axes <u>Ratios</u> **M3** for 8 correct ratios (in order: 1·24, 1·62, 1·87, 1·89, 1·88, 2·96, 1·69, 1·69) (allow **M2** for 4 correct ratios or **M1** for any attempt at ratios) **M1** for an identification of any acceptable cluster allow ratios either way round, these figures are correct to 3sf so allow figures to a greater degree of accuracy If ratio used, accept a cluster from B, G, H or C, D, E
25	**(a)** $5(3b + 2)$ **(b)** $5d - 4$ final answer	**1** **2**	 **M1** for $3d - 6 + 2d + 2$ or $5d$ or $^{-}4$ seen

Paper Total: 100

Assessment Objectives and Functional Elements Grid

GCSE MATHEMATICS B

J567/02

Mathematics B Paper 2 (Foundation Tier)

	Topic	Context	Ref	AO1	AO2	AO3	Functional
1	Arithmetic, percentages		FIN2 FIN3 FBN7	3			
2	Sequences		FIA1	4			
3	Time, formulae, money problem, listing outcomes, probability	Activity camp	FIN10 FIA2 FIN9 FBS1		8		3
4	Interpret graph, negative numbers, rounding, time	Toronto	FIS4 FIN12 FIN1 FIN10		7		3
5	Scales, units of length		FIG1	4			
6	Fractions of…		FIN5	3			
7	Simplify expressions, formulae		FBA3 FBA2	5			
8	Net of cuboid		FBG3	3			
9	Recognise type of triangle; calculate perimeter		FIG4 FIG5	3			
10	Angle reasoning		FIG3 FBG1	4			
11	Percentage of a quantity, order of operations		FBN7 FSN6	4			
12	Properties of quadrilaterals		FBG5	3			
13	Fractions and percentages	Milkshake recipe, school attendance	FBN5 FSN2			4	4
14	Construct triangle and measure side		FSG2	3			
15	Conversion graph	Miles/km	FBA5			4	4
16	Questionnaire	Library	FSS5		3		3
17	Speed, estimation	Car journey	FBN2 FSN6 FGG2		4		4
18	Equation		FSA2	3			
19	Area of circle, compound measures	Fish pond	FSG3 FGG2			6	6
20	Ratio	School	FSN5	2	2		
21	Averages	Wages	FIS3			5	5
22	Cubes		FBN3	3			
23	Money problem	Holidays	FIN9 FIS5		2		2
24	Scatter diagram	Leaves	FGS3			5	5
25	Using brackets in algebra		FSA3	3			
	TOTALS		**80**	**50**	**26**	**24**	**39**

Paper Total: 100 marks